SPATIAL SENSEMAKING IN WILDLAND–URBAN INTERFACES: A FRAMING PERSPECTIVE OF MULTIPARTY LAND MANAGEMENT DECISIONS

by

MARTI S. WHITE

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written by Marti S. White
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Dr. Jody L. S. Jahn

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Dr. Lawrence R. Frey

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Dr. Matthew A. Koschmann

Date _____

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White, Marti S. (MA, Communication)

Spatial Sensemaking in Wildland–Urban Interfaces: A Framing Perspective of Multiparty Land Management Decisions

Thesis directed by Professor Jody L. S. Jahn

Abstract

This MA thesis extends theorizing on sensemaking frames and framing, by incorporating ideas drawn from scholarly literature about space and place, to explore the notion of "spatial framing repertoires," and, particularly, how people's experiences of physical landscapes are symbolic and enacted. Specifically, this empirical study investigated an ongoing dispute over land management activities in the wildland–urban interface, where residential and public land meet, exploring how residents' and land managers' experiences of space and place informed their sensemaking frames about land management decisions. The study reveals the significance of spatiality for understanding people's sensemaking processes, in general, and, sensemaking framing repertoires, specifically.

Keywords: sensemaking, sensemaking frames, multiparty land management decisions, place attachment, wildland–urban interface

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CHAPTER 1
INTRODUCTION

The wildland–urban interface (WUI), where residential and public land meet, is a complex landscape (Fahey & Wells, 2015). The rise in human habitation in the WUI, and the momentous impacts of wildfire, means that diverse parties (e.g., the federal government, city councils, and neighborhood groups and associations) have a stake in how public lands are managed (Fahey & Wells, 2015; Stein et al., 2013). According to Fahey and Wells (2015), "60 percent of homes that have been built since 1990 have been in the [WUI]" (para. 6), which, in turn, has increased the amount of resources that are needed to protect residential homes from natural disasters, such as wildfires. In 2014 alone, the U.S. Forest Service (USFS) spent more than $1.2 billion dollars on fire suppression (Fahey & Wells). The growing population of residents in WUIs in the United States, subsequently, increases the potential for conflict among key stakeholders (e.g., local and federal government officials, and residents) regarding how best to prevent wildland fire and maintain public lands.

Wildfires have widespread effects on residents and on land, as "each year, an average of more than 73,000 wildfires burn about 7 million acres of federal, tribal, state, and private land and more than 2,600 structures" (USFS, n.d., para. 1). Although wildfire is an imminent threat in WUI areas, homeowners' perspectives on, and participation in, wildfire mitigation programs vary (Brenkert–Smith, Champ, & Flores, 2006). Residents protect their properties proactively by doing mitigation work, which includes creating defensible space around property, removing overgrowth, and fortifying homes to make their external structures less flammable (Colorado State Forest Service, 2012). Homeowners' fuel mitigation of their property is different from *fuel treatment work*, which refers to larger scale land management strategies engaged in by local,

state and federal agencies. Fuel treatment activities by government agencies can include prescribed burns and removal of fuels, in hopes of containing future wildland fires.

Homeowners' "continuum" of views and involvement in fuel mitigation work can contribute to diverse expectations among residents about how government agencies should manage public lands; in turn, those differences can engender conflicting opinions about proposed plans by government agencies regarding how best to mitigate future wildfires. Land management decisions do not take place in a vacuum; they occur at the boundary where agencies and stakeholders meet. Public deliberations about land management decisions and conflicts can shape, change, and even block large-scale and, possibly, highly important land management activities. Delaying projects meant to contain, delay, and prevent future wildland fires, potentially, could have catastrophic consequences. Thus, it is important to understand how these conflicts unfold.

A central issue for WUI areas is that stakeholders have conflicting perspectives on how best to manage private and public interests to accomplish the goal of protecting residents and structures from destructive wildfires. Residents in WUIs can be "very attached to the current landscape and [do] not want to alter it unnecessarily" (Brenkert-Smith, Champ, & Flores, 2006, p. 767), posing difficulty for resolving conflicting viewpoints, especially when that attachment can threaten community safety. Because WUI residents' attachment to landscape is symbolic, scholars need to understand that symbolic relationship to physical landscape, and how WUI residents make sense of that space. By understanding WUI residents' sensemaking through the lenses of their symbolic relationship to the land, scholars can better understand the WUI residents' enactment of space, a central tenant of sensemaking. This symbolic relationship is important to the study of communication, and because this issue involves organizing practices, it

is relevant to the study of organizational communication. Additionally, sensemaking, a key tenant in organizational communication, is the main theoretical framework for this study. This study addresses organizational communication literature by exploring multiparty land management decisions in WUIs, to incorporate spatiality into scholarly understanding of WUI stakeholders' sensemaking. The field of organizational communication does provide a theoretical perspective—namely, the sensemaking theoretical lens (Weick, 1995)—that is helpful for examining the communication that is at the heart of land management conflicts and decisions. Such a communication understanding of stakeholders' sensemaking frames, potentially, can help scholars, practitioners, and stakeholders to resolve conflicting views in environmental conflicts. This will happen by facilitating WUI residents to utilize positive frames. It is valuable because conflicting views in environmental conflict can stall important land management projects. This stalling could lead to catastrophic disasters in the WUI.

This study draws from sensemaking frames literature to analyze how WUI stakeholders communicate about their relationship with their physical space, and how interpersonal relationships among WUI stakeholders affect their perspectives in land management decisions. To accomplish that goal, this study sets sensemaking framing literature in conversation with literature on place attachment, place identity, and place dependence (e.g., Di Masso, Dixon, & Durrheim, 2014; Low & Altman, 1992; Manzo, 2003; Stokols & Shumaker, 1981). Sensemaking frames play an important role in managing conflicts among people, particularly intractable multiparty conflicts (Brummans et al., 2008) and land management decisions, because frames bring into view competing perspectives among stakeholders, and tracking frames helps to see how they are invoked throughout a conflict in ways that, potentially, make a difference in the trajectory of whether that conflict is resolved or continued. Moreover, literature on place

attachment directs attention to how residents' sensemaking is grounded in the, possibly, symbolic and contested physical landscapes of WUI areas.

Sensemaking produces "a pile of cues in need of some frame to organize them" (Weick, 1999, p. 41). Research on sensemaking frames has focused on themes such as leadership framing and sensegiving (Bean & Hamilton, 2006, Hall, 2011, Maitlis & Lawrence, 2007, Minei, 2015), conflict framing (Brummans et al., 2008), and the role of frames in constructing reality (Colville, Pye, & Carter, 2013), reflective process (Cunliffe & Coupland, 2012), identity (Larson & Pepper, 2003; Rivera, 2015; Tracy, Myers, & Scott, 2006), and resilience (Buzzanell, 2010). However, scholarly literature on sensemaking frames has not accounted sufficiently for how frames are situated in people's physical and symbolic experiences of space (Maitlis & Christenson, 2014). The present study advances sensemaking literature by exploring how sensemaking frames are situated spatially for WUI stakeholders' unique relationship with their land, and how WUI stakeholders' spatial sensemaking affects their framing of land management decisions. This theoretical contribution to sensemaking frames also has applied value for providing insight into public conflicts about consequential land management decisions in often-contested WUI landscapes. Due to the significant effects of wildfires, and the role that the government and homeowners play in preventing their ignition and spread, studying WUIs through this theoretical framework will benefit scholars, land management agencies, and members of WUI communities Beyond the practical case for this study, from a theoretical perspective this case study demonstrates how a cognitive understanding of an act, such as residents' understanding fuel treatments and the need for them, can be altered after a material impact on the landscape. After fuel treatments are played out on the landscape and are no longer just an idea, WUI residents enactment of their space where they live shifts. An understanding of

how WUI residents frame this enactment benefits practitioners managing conflict in these spaces in how to transform how residents frame multiparty land management decisions, and benefits scholars seeking a better understanding of the impact of spatiality on sensemaking frames.

This study is based on fieldwork conducted about a U.S. Forest Service (USFS)-planned fuel treatment project, Forsythe II, which would affect 2,460 acres in the Boulder Ranger District of Arapaho and Roosevelt National Forests, in Boulder County, Colorado (Jahn, 2016). Boulder County is part of the 7,000,000 acres of the WUI in Colorado (Colorado State Forest Service, n.d.). Originally, the Forsythe II plan was going to affect 3,840 acres in Boulder County, but strong opposition by a vocal group of residents led to modifications in that plan.

Fuel treatment decisions can greatly "influence a community's vulnerability to damage from wildfire" (Stein et al., 2013, p. 1). Studies that have examined land management decisions in the WUI context have included identifying WUIs' unique characteristics (Radeloff et al., 2005; Stewart, Radeloff, Hammer, & Hawbaker, 2007), risk perceptions and their management in WUIs (Calkin, Cohen, Finney, & Thompson, 2014; Meldrum et al., 2015), and types of WUI communities (Brenkert-Smith et al., 2006). The present study builds from and adds to the growing literature that explores the uniqueness of WUI communities. In particular, this study applies a communication lens to examine how stakeholders situate themselves in relation to spatial aspects of WUIs, and how those views affects their relationships with other people living in WUIs.

This study takes place in the context of an ongoing dispute about land management activities, exploring how WUI residents' and land managers' experiences of space and place inform their sensemaking frames about land management decisions. To accomplish the study's goals, Chapter 2 reviews scholarly literature on sensemaking, frames, and framing from a

sensemaking perspective, as well as literature on place attachment (and its two dimensions of place identity and place dependence). I put these literatures in conversation to situate sensemaking as occurring spatially, with participants involved in this multiparty land management conflict using spatial framing repertoires. I position sensemaking as a tool to better understand multiparty land management conflict, which leads to two research questions that are explored in the empirical study. Chapter 3 outlines the case study, focusing, specifically, on how I explored spatial framing repertories by conducting interviews with residents and land managers, as well as by observing public meetings and utilizing open-ended responses from survey questionnaires that residents completed. Chapter 4 presents findings for the two research questions posed; specifically, on spatial framing repertoires that WUI residents invoke and how WUI residents make sense collectively of multiparty land management decisions. In Chapter 5, I discuss implications of these findings for future research about sensemaking, frames, and framing, particularly, in land management decisions among WUI residents, examine limitations of the study, and I offer practical recommendations for future land management decision processes involving WUI residents.

CHAPTER 2

REVIEW OF LITERATURE AND RESEARCH QUESTIONS

This research study is situated in scholarly literature on sensemaking, frames, and framing, from both cognitive and communication perspectives, putting this literature into conversation with place attachment literature. I propose three connections between sensemaking framing literature and place attachment—particularly, place identity and place dependence—to extend theorizing of spatial framing repertoires. This chapter situate sensemaking as occurring spatially, and proposes spatial framing repertoires, by bringing together literature on place attachment and sensemaking frames, which leads to two research questions that are posed.

Overview of Sensemaking

Sensemaking, generally, is understood as a communication process through which actors generate an explanation for a surprising or ambiguous set of circumstances (Weick, 1995). Although there are numerous definitions of the concept, I use Maitlis and Christianson's (2014) definition of "sensemaking" as "a process, prompted by violated expectations, that involves attending to and bracketing cues in the environment, creating intersubjective meaning through cycles of interpretation and action, and thereby enacting a more ordered environment from which further cues can be drawn" (p. 67). Sensemaking provides order to disorder, occurs when routine is "broken," provides meaning to experience, is retrospective, implies presumption by those doing the sensemaking, is influenced socially, and thinks ahead to the next course of action (Weick, Sutcliffe, & Obstfeld, 2005).

Weick's (1995) seminal book outlined seven properties of sensemaking that shape how people make sense of phenomena, or accounts that people generate through the process of making sense: (a) grounded in identity construction, meaning that people explain events from the

perspective of identities that they occupy during events; (b) retrospective, in that people understand their experiences after the fact; (c) enactive of sensible environments, meaning that people produce and constrain their surroundings and circumstances; (d) social, in that sensemaking is not an individual process but a process of human interaction; (e) ongoing, such that it is a continuous process with no beginning or end; (f) focused on and by extracted cues, with people using structures and patterned thinking that they formed previously as the basis for their sensemaking; and (g) driven by plausibility rather than accuracy, such that it is more important to come to a reasonable conclusion and to keep processing meaning than it is to arrive at the so-called "right" conclusion. 2015).

Sensemaking from Two Perspectives: Frames and Framing

Over the last 2 decades, organizational communication scholars have studied these sensemaking properties with regard to the following themes: how sensemaking is accomplished, how intersubjective meaning is constructed in organizations by organizational actors, the role of action in sensemaking, and what sensemaking accomplishes (Maitlis & Christianson, 2014). Scholarly literature has framed sensemaking as being either internal, created through cognitive processes by individual actors, or as external, created in communication processes among people (Maitlis & Christianson). One specific area of sensemaking literature has focused on frames and *framing*, which refers to a process "of organizing experience through a certain way of defining what is going on in a situation" (Brummans et al., 2008, p. 26). Scholars also have approach framing in terms from a cognition perspective or from a communication perspective that views framing as created via people's interactions with others (Brummans et al., 2008; Castor & Bartesaghi, 2016; Minei, 2015).

Frames and framing have received attention across scholarly disciplines, and they have been picked up by communication scholars, who have used both cognitive and communication sensemaking perspectives (e.g., Bergeron & Cooren, 2012; Brummans et al., 2008). This study draws from both perspective, in that *frames* are considered to be cognitive constructions of sense making, whereas *framing* refers to ways in which people invoke frames in interaction episodes. Ultimately, this study builds on communication understandings of sensemaking by considering both frames and framing. Below, I review briefly the history of frames and framing, from both cognitive and communication perspectives, followed by a review of literature on these concepts from a sensemaking lens.

Scholars' perspectives on where and when sensemaking happens represent their ontological perspective of sensemaking as a cognitive versus a socially constructed process (Maitlis & Christianson, 2014). Sensemaking processes begin—and sensemaking frames become salient—when people's expectations are violated due to an ongoing process becoming broken or unexpected changes in the process occurring (Weick, 1995). Violated expectations prompts sense-makers to notice and bracket cues in their environment. Attending to cues in an environment creates a frame (Maitlis & Christianson, 2014), and "frames and cues can be thought of as vocabularies in which words that are more abstract (frames) include and point to other less abstract words (cues) that become sensible in the context created by the more inclusive words" (Weick, 1995, p. 110). Sensemaking involves *bracketing* cues, meaning that people cluster cues together to generate an explanation of what they are seeing or experiencing. In the case of WUIs, there is an ongoing aspect of change that is happening in the physical environment, whether it be the threat of wildfire or conflict with other stakeholders about land management decisions. Because such large-scale changes are difficult to understand, residents

bracket observations of their surroundings in ways that help them to create *sensible* explanations of them.

In the WUI context, the framing of cues that are tinged emotionally by sense-makers is important for understanding their perceptions about and positions on land management decisions, which leads to the question of how stakeholders, during an environmental conflict, make sense communicatively of their relationship with their physical landscape. Brummans et al. (2008) argued "that conflict sensemaking is a matter of *framing*" (p. 26). They conducted a study of sensemaking frames employed in environmental conflicts to better understand intractable multiparty environmental conflicts. Brummans et al. focused on four multiparty environmental conflicts that "involved a variety of stakeholder groups who engaged in conflict for a length period of time (at least several years) without being able to move forwards on the central issues in question" (p. 29). The four sites were long-term environmental disputes about water regulations in Ohio, the removal of a former chemical plant in Pennsylvania, management of a national park in Minnesota, and the use of an aquifer in Texas. They conducted more than 150 open-ended, semistructured interviews of central figures from various stakeholder groups in these long-term environmental disputes. Brummans et al. also analyzed relevant document to provide, in their report, context to the conflict and what participants said during interviews. Their data analysis consisted of four procedures: constant comparative analysis (phases 1 and 2), content analysis, cluster analysis, and chi-square analysis.

Brummans et al. (2008) found that participants told four types of stories regarding these intractable multiparty environmental conflicts: stories of victimhood, dispassion, optimism and hope, and power and powerlessness in the environmental conflict. For example, stories in the first cluster, of victimhood, shared negative emotions about the conflicts, framing them using

"vivid adjectives and descriptors that signaled anger, hurt, mistrust, and sentiments of unfairness" (Brummans et al., p. 37). Participants who told this type of story had been involved in the conflict for a significant length of time, or they were involved in more than one conflict, and they had negative views about the conflict ever being resolved.

Importantly, the four clusters revealed that stakeholders can and do frame conflicts differently from their peer group members (e.g., those who are opposed to something do not use the same frame). These four clusters are important for understanding how groups' framing of environmental conflicts can operate beyond traditional expectations (e.g., all those in support of an issue have the same frames), because "this blending illustrates that disputants with *supposedly* the same feelings and conflict experiences may use different repertoires to define what is going on" (Brummans et al., p. 44).

To understand further the importance of stakeholders' framing when they make sense communicatively of their relationship with their physical landscape in an environmental conflict, below, I review scholarly literature on both cognitive frames and communicative framing (or invoking frames). I then explore the relationship between framing and sensemaking, to introduce the concept of "spatial framing repertoires."

Cognitive Frames

Historically, framing and frames have been grouped together and used interchangeably in the scholarly literature (McNamee, 2017). However, in line with Maitlis and Christianson's (2014) work, I consider cognitive "frames" to be cerebral sense making in which actors engage (e.g., expressed in the form of actors' narratives), and communicative "framing" to be the process of invoking frames in interaction.

From a cognitive perspective, *frames* are "memory structures that aid individuals in processing information" (McNamee, 2017, p. 3), whereas from a communicative perspective, framing is an interactional process (Goffman, 1972), with frames addressing "the structure of experience individuals have at any moment of their social life" (Goffman, 1974, p. 13). Dewulf et al. (2009) identified six perspectives on conflict framing in research that cover both cognitive and interactional dimensions: The cognitive dimensions are: (a) cognitive issue frames, which are utilized "as parties' cognitive representations of the substantive issues in a conflict or negotiation" (Dewulf et al., p. 167); (b) cognitive identity and relationship frames, which are used in the context of identities (e.g., how people relate their identity to others based on their relationship with others; and)c) frames and cognitive process frames, which represent and serve as a memory of previous interactions. The interactional dimensions include: (a) interactional issue framing, which "focuses on how parties negotiate the meanings of issues in social interaction" (p. 170); (b) interactional identities and relationship framing, which are used when people co-construct identities in interactions with others; and (c) interactional process framing, which focuses "how parties make sense of the interaction (Dewulf et al., p. 175). McNamee's (2017) review of organizational communication literature found that scholars viewed frames and framing as "structures of expectations that enable individuals to construct meanings and viewpoints about their environments, along with the related process of foregrounding particular structures over others" (p. 1). This understanding of frames and framing has been taken up by scholars studying sensemaking, to demonstrate the enactment of meaning making.

Communicative Framing—Invoking Frames

Framing is rooted deeply in sensemaking processes, with Weick (1995) noting that the "content of sensemaking is to be found in the frames and categories that summarize past

experience, in the cues and labels that snare specifics of the present experience, and in the ways these two settings of experience are connected" (p. 111). Additionally, sensemaking frames account for related constructs, such as *sensegiving*, which involves "attempting to influence the sensemaking and meaning construction of others toward a preferred redefinition of organizational reality" (Gioia & Chittipeddi, 1991, p. 442), and *sensebreaking*, "the destruction or breaking down of meaning" (Pratt, 2000, p. 464).

Sensegiving frames are invoked to provide explanations for phenomena; for example, Gioia and Chittipeddi (1991) found that leaders during an organizational change invoked framing to affect organizational members' sensemaking processes. The researchers studied a higher education institution and an incoming leader's strategic change initiative, using a dual-researcher ethnographic approach, with one being an "inside" researcher, who was a confidant of the new leader, and the other an "outside" researcher.

The first part of the study consisted of an ethnographic story, and the second order consisted of theoretical contributions to sensemaking, specifically identifying two constructs of "sensegiving" and "sensemaking." In Gioia and Chittipeddi' (1991) first-level analysis, they identified four stages of the strategic change process, which can (and did) overlap, with each stage operating as "sensegiving" or as "sensemaking" (with that framework developed in the second-level analysis). The four stages that were identified were: (a) *envisioning* (sensemaking), which happened before and in the early stages of the new leader coming into that organization; (b) *signaling* (sensegiving), where the leader provided a concrete and public vision/strategy for the organization; (c) *re-visioning* (sensemaking), which acknowledged tension of key stakeholders, pushback by employees, and reconfiguring of proposed change by leadership; and

(d) *energizing* (sensegiving), with the leader's influence widening throughout the organization and gaining support.

The second-level analysis revealed the two frameworks of "sensegiving" and "sensemaking," with Gioia and Chittipeddi differentiating sensemaking as cognition from sensegiving as action. Cognitive sensemaking by organizational members occurred during the envisioning and re-visioning stages, when organizational members sought to understand the new leadership, whereas action-oriented sensegiving occurred during the signaling and energizing stages, when organizational members were influenced by the new leader to act in ways that were different from how they acted prior to that person's arrival. These findings have important implications for leaders managing strategic change initiatives in organizations, with Gioia and Chittipeddi focusing, in particular, on the importance of a leader's vision of change initiatives for an organization. Further research on sensegiving and leadership has, also, focused on the sensegiving framework but extended these constructs with framing.

Minei (2015) wanted to understand how small business leaders manage employees' sensemaking, particularly when there is uncertainty around what "organizational success" means. Minei focused on a single, small business location, a temp agency, spending more than 50 hours at the organization as a participant-observer, conducting 27 interviews, and analyzing relevant documents. Minei found that sensegiving as a framing tool was used effectively by leaders to manage uncertain events at the temp agency, which was experiencing high turnover and stagnation in company growth. Minei employed three theoretical concepts (sensemaking, sensegiving, and framing) to understand how small business leaders manage sensemaking and effects of that sensemaking on employees, particularly when there is uncertainty regarding what organizational "success" means. Minei focused on three aspects of framing as a discursive

process that are tied to sensegiving: (a) controlling the context, which refers to how employees' interpretation of events is influenced by organizational leaders; (b) defining the situation, which refers to leaders explaining events taking place in ways that communicate clearly what employees should think about those events; and (c) interpreting uncertainty, which refers to employees being reassured in times of doubt by leaders' communication to them (both formal and informal messages).

Minei (2015) identified two framing explanations for how the organizational uncertainty that employees experienced in that temp agency was handled by leadership: "harmonious framing-to-sensemaking" and "discordant framing-to-sensemaking." *Harmonious framing-to-sensemaking* was characterized by three criteria: leaders (a) used a framed message that employees agreed with, and leaders followed through in their actions; (b) used a framed message that resulted in an advantageous and favorable outcome for the organization; and (c) provided a clear frame that resulted in employees following the framed message successfully. For example, Minei looked at how leaders utilized the company motto and descriptions of employees' positions to ensure that employees and new hires made sense appropriately of the company's mission and purpose (sensegiving). *Discordant framing-to-sensemaking* was characterized by three criteria: leaders (a) used a framed message that employees did not agree with, and those leaders did not follow through in their actions, (b) did not use a framed message and the lack of sensegiving resulted in a disadvantageous outcome for the organization; and (c) gave multiple, unclear frames that resulted in equivocal sensemaking by employees. For instance, employees commented on the lack of transparency regarding the organization's direction that aligned with discordant framing-to-sensemaking.

Drawing on framing, sensegiving, and sensemaking, Minei (2015) argued that sensegiving is a framing tool that can be used effectively by leaders to manage uncertain events that occur in organizations. Additionally, Minei offered practical recommendations for organizations experiencing discordant framing-to-sensemaking, including executive leadership team having a unified vision, leaders conducting regular feedback sessions with employees, increasing leaders' visibility to employees, and leaders being aware of how each area of the company operates. Minei's findings are relevant to the present study because they suggest that leadership demonstrated by federal government officials, local government officials, and community leaders in WUI disputes can affect significantly land management decisions. Scholarly work has extended conflict research by incorporating framing repertoires.

Brummans et al. (2008) defined *framing repertoires* "as a pattern of highlighting similar aspects of experience to give a coherent account of what is going on that is continuously shaped and reshaped in interactions" (p. 26); hence, framing repertoires are sets of related frames. As mentioned previously, Brummans et al. found four clusters of framing repertoires in their study of stakeholders involved in multiparty environmental conflicts, with the third cluster consisting of stories that "very optimistic . . . almost in a Pollyanna-like way" (p. 40). Frames also can foster individuals' understanding of, and collective organizational learning in, a crisis management situation (Bergeron & Cooren, 2012). Frames are dynamic within stakeholder groups; thus, in the WUI, it is important to understand the fragility of stakeholders' frames (Bean & Hamilton, 2006). However, within the meaning-making process of framing, the unique relationship that sense-makers have with physical landscapes has not been explored sufficiently. This review of research on frames and framing from a sensemaking perspective reveals the need

to focus further attention on issues of space and place. The next section explains spatial framing repertoires.

Spatial Framing Repertoires

Although scholarship about sensemaking largely has ignored spatiality, there are exceptions. Brown, Colville, and Pye (2015) argued for the need to understand more fully the role of spatiality and temporality in organizational decision making—not just when organizations experience disruption or change but also in the day-to-day sensemaking that is done by organizational members. Sensemaking is inherently spatially enacted and, in regard, to this study sensemaking deals with how people negotiate ideas about how to make use of certain spaces. Conflicts arises in these contexts. Although scholars have alluded to sensemaking being situated in particular contexts, often, they have not addressed how spatiality influences people's sensemaking frames (Brown et al., 2015; Maitlis & Christianson, 2014).

One exception was Hultin and Mähring's (2016) study, which responded to calls (see Brown et al., 2015; Maitlis & Christianson, 2014) for research about ongoing sensemaking and the embodied nature of the sensemaking process. Their ethnographic study was conducted in a European hospital department that had implemented process changes to support a new management model; the changes included installing a digital visualization board, which added a material aspect to the hospital environment. Hultin and Mähring observed the hospital at three points in a year-long period, interviewed hospital staff members, and analyzed hospital documents. Hultin and Mähring found that the digital visualization board affected hospital staff members' interpretation of their spatial environment. This study, grounded in a posthumanist view to explore materiality and ongoing sensemaking; examined three concepts: material–discursive practices, flow of agency, and subject positions. Material–discursive practices, or the

"entanglement" of interaction and material objects, were examined to show that "sensemaking can neither be understood as a mental activity occurring inside a separated human being, nor as interaction between social and material actors" (Hultin & Mähring, p. 19). Hultin and Mähring attended to the spatial environment, finding that physical space altered hospital staff members' organizational practices, and that their work privileged material–discursive practices rather than specific issues of space and place. Although Hultin and Mähring's study is valuable for understanding how focusing attention away from human actors highlights material influences on organizational practices, they did not explore sufficiently the influence of space on organizational members' sensemaking processes.

Whiteman and Cooper (2011) studied nature as a space that influences people's sensemaking processes. With regard to such sensemaking, Whiteman and Cooper described the importance of *ecological embeddedness*, which refers to the extent to which people perceive themselves as being part of and learning from a physical environment. Drawing from the field of ecology, and using the natural environment in subarctic Canada as their context of study, Whiteman and Cooper focused on how sensemaking processes influence human survival and depend on people's ecological embeddedness. Ecological embeddedness has the potential to make prior-enacted environments more germane for actors, increase their knowledge of the local landscape, and lead them to engage in experiential learning about the local landscape. To account for ecological embeddedness, Whiteman and Cooper introduced the concept of *ecological sensemaking*, defined as how actors make sense of physical environments and their processes. The authors began their report with a story about how one of them almost died due to a lack of making sense of the physical landscape. However, their theoretical contribution did not acknowledge actors' potential emotional connections with land, beyond understanding ecology

to survive. Thus, ecological sensemaking would benefit from a better understanding of place attachment theorizing, which addresses how people bond with physical places (Low & Altman, 1992), which spatial sensemaking proposes. Building upon ecological sensemaking, I define *spatial framing repertoires* as a pattern of frames that are produced from people focusing on related parts of an experience with their physical environment, when they make sense of interactions with other people about physical landscapes. The next section extends work on sensemaking frames by placing it in conversation with place attachment literature, to propose that spatial framing repertoires involve aspects of sensemaking and place attachment.

Spatial Frames

I propose that theorizing on sensemaking frames would benefit from incorporating place attachment theory because. Enactment is central to sensemaking and incorporating place attachment would put focus on the physical environment's impact on enactment. Place attachment has long been studied by environmental psychologists; however, Di Masso et al. (2014) argued that environmental psychology has not focused enough attention on place attachment interactional processes, especially with regard to how place attachment is constructed socially. A communication understanding that focuses on those interactional processes, and, specifically, uses a sensemaking framework and acknowledges place attachment, thus, will account better than does previous sensemaking research for emotional connections that WUI residents have with their physical environment.

Two conceptual dimensions compromise place attachment: place dependence and place identity. These conceptual dimensions are important in my approach to theorizing spatial framing repertoires, as I advance three connections between sensemaking framing literature and place attachment—particularly, place identity and place dependence—to extend theorizing of

spatial framing repertoires. These three connections draw out underdeveloped theory in sensemaking to demonstrate how sensemaking is deeply rooted in space and place. The first connection is between the foundational role of identity construction in sensemaking and place identity literature; the second connection is between individuals' bracketing of cues and place dependence; and the third connection is that both sensemaking frames and place attachment have emotional aspects that deserve recognition. Following the explanations below of these three connections, I propose two research questions that focus on spatial frames and how spatial frames repertoires are invoked in sensemaking.

Identity construction and place identity. The first connection from which spatial sensemaking repertoires builds is between the foundational role of identity construction in sensemaking processes and place identity literature. The "establishment and maintenance of identity is a core preoccupation of sensemaking" (Weick, 1995, p. 20). Connecting place identity literature with the notion that sensemaking is grounded in identity construction demonstrates the intrinsic tie between identity construction and spatiality. *Place identity*, consequently, is "dimensions of the self that develops in relationship to the physical environment" (Manzo, 2003, p. 47).

Place attachment literature has emphasized that a specific place can be tied up heavily with how people interpret environmental issues, process their relationships with landscapes, and their identities (Bonaiuto, Carrus, Martorella, & Bonnes, 2002). Individuals' bodily experiences of place are tied to their identity construction via "personal narratives with their bodily experiences of emotionality and mood" (Eisenberg, 2001, p. 542). How people relate these personal narratives and construct their identities, and, particularly, place identity, could be a part of their spatial sensemaking frame. Sensemaking frames can "unfold as a sequence in which

people concerned with identity in the social context of other actors engage ongoing circumstances from which they extract cues and make plausible sense retrospectively" (Weick et al., 2005, p. 409). Research on sensemaking, identity, and frames has acknowledged that identity maintenance is "a process rife with tensions associated with insecurities and driven by *previously formed attachments* to stories, events, and symbols used for ascribing meaning" (Bean & Hamilton, 2006, p. 327). I advocate that another "previously formed attachment" to identity construction and maintenance via sensemaking processes is place attachment.

Framing, emotional connections, and place dependence. The second connection from which spatial sensemaking repertoires builds is between individuals' bracketing of cues and place dependence. First, a property of sensemaking that focuses on extracting and bracketing of cues highlights the contextual nature of sensemaking, in general (Weick, 1995), and, more specifically, how sensemaking processes stem from physical enactment of (i.e., physical activity in) certain landscapes (Whiteman & Cooper, 2011). Therefore, understanding cues and spatiality is imperative, because sensemaking can affect people's emotions and interactions with others about particular landscapes. Second, an emotional connection to space and place should be accounted for in sensemaking processes, to understand the degree to which people's connection to place can render sensemaking frames resistant to change.

Emotional connections to a landscape can strengthen individuals' place dependence and affect their sensemaking frames when they describe that landscape. *Place dependence* is an "occupant's perceived strength of association between him or herself and specific places" (Stokols & Shumaker, 1981, p. 457). One factor in the development of people's place dependence is their experiences with a landscape (White, Virden, & van Riper, 2008). By engaging place dependence with sensemaking frames, individuals' association with a place could

affect their support or opposition to land management decisions, especially because a strong sense of place dependence means that residents associate a particular landscape with a narrow range of activities they deem to be important to them (e.g., a particular patch of forest may be seen as special to someone for hiking). Such place-dependent associations with particular landscapes might make residents resistant to changing landscapes in ways that would change their personal use of it (e.g., removing trees might be perceived as making that patch of forest less desirable for hiking; White, Virden, & van Riper). In this case, frames are "enactments of situations that people will act upon, and they pick up their cues accordingly, describing them in words appropriate to a given frame or vocabulary" (Czarniawska, 2006, p. 1670).

Weber, Thomas, and Stephens (2015) found that external stakeholders (in this case, the public) can affect organizational members' sensemaking processes, as the public's influence changed how internal organizational members made sense of violated expectations within their organization. Weber et al. studied a Coast Guard headquarters that attempted to implement post-9/11 new training processes, which were met with negative reactions by external stakeholders (e.g., the public and local media) because of a fire-related incident that occurred at the site after the new training processes were put in place. Their data collection included analysis of public comments and newspaper articles about the incident. In the case of WUIs, the public and local media also have a large impact on how the USFS determines policy, and, in turn, the USFS affects the public's bracketing of cues and framing of WUI incidents. By connecting bracketing of cues and place dependence, I draw attention to how people's emotional connections to physical spaces can shape cues that they notice in their environment and can lead to them enacting frames to solidify their positionality in an environmental conflict, resulting in making that conflict intractable.

People's emotional connections to physical spaces, drawn out by both sensemaking frames and place attachment, contribute to spatial framing repertoires. In other words, when people are attached emotionally to a landscape, as can be the case in WUI areas, they might be resistant to changing that landscape, as those changes could affect their use of and connection to that landscape (place dependence), in addition to affecting their sense of self in relation to that landscape (place identity). As discussed previously, Whiteman and Cooper (2011) failed to acknowledge people's emotional relationships to land beyond an inherent need to survive, and spatial sensemaking builds on their concept of "ecological sensemaking," or "how actors notice and bracket ecologically material cues from a stream of experience and build connections and causal networks between various cues and with past enacted environments" (pp. 890–891), to incorporate emotional aspects, using place attachment theory, which "explicitly contains emotional content" (Jorgenson & Stedman, 2001, p. 234). Place attachment pertains to both the use of space and emotional connections that are invoked by that space. Maitlis, Vogus, and Lawrence (2013) advocated for a focus on emotions in sensemaking research, and, more specifically, a deeper understanding of the role that emotions play in organizational members' sensemaking, as emotions can motivate individuals' sensemaking after a disruption to their routine. I argue that this trigger of emotions to begin sensemaking can be connected to individuals' place attachment (i.e., place identity and place dependence).

Thus, there are three important connections: the foundational role of identity construction in sensemaking and place identity literature, individuals' bracketing of cues and place dependence, and that both sensemaking frames and place attachment have emotional aspects that deserve recognition. These connections lead to the following research question

RQ1: How do WUI residents inscribe sense onto the WUI landscape?

Invoking Spatial Frames

Residents do not engage in spatial sensemaking by themselves, and spatial sensemaking repertoires address ways in which stakeholders inscribe sense onto physical land by invoking certain language when they engage in sensemaking about that land. Scholars have identified Weick's (1995) explication of sensemaking processes as being done collectively in intraorganizational contexts (Weber, Thomas, & Stephens, 2015), but sensemaking processes are not limited to intraorganizational contexts. Environmental issues provide a particularly rich context for exploring how multiple parties—representatives of governments, communities, and other organizations—make sense collectively of local environmental issues and what to do about them. Environmental sensemaking can emerge from interactions with physical artifacts (Stigliani & Ravasi, 2012), and it can be evoked when attending to certain aspects (or artifacts) of physical landscapes that people consider to be emotionally or symbolically important. Moreover, sensemaking about physical artifacts can change from an individual to a group or collective process (Stigliani & Ravasi, 2012). Changes in an organization prompt sensemaking processes among stakeholders (Balogun & Johnson, 2005). Weick et al. (2005) emphasized that sensemaking is created intersubjectivity in talk, drawing upon language (which is imbued with entrenched meanings and knowledge). people can create shared representations and understandings of their environment.

Traditionally, sensemaking research has focused on organizational sensemaking among members within the organization (Weber et al., 2015); however, public stakeholders also can participate in sensemaking during interactions with governmental employees. This study considers how spatial framing repertoires are evoked collectively, which leads to the following research question:

RQ2: How does spatially inscribed sense about contested spaces influence stakeholder sensemaking efforts regarding managing the landscape (e.g., in public forums/discussions about land management decisions pertaining to that space)?

CHAPTER 3
METHODS

This section outlines the case study that I conducted. In particular, I explored spatial framing repertoires by observing public meetings, conducting interviews with residents and land managers, and reviewing public comments and open-ended responses from survey questionnaires completed by residents. I obtained researcher access through participation in a grant and negotiated research positionality in a hot button political issue.

Case Background

Colorado provides an ideal backdrop to study the wildland–urban interface (WUI). As the Interagency Federal Wildland Urban Interface Working Group argued, in "the Western states such as Colorado, the wildfire risk in the WUI poses a challenge with respect to public safety, financial responsibility, and natural resource integrity" (as cited in Brenkert-Smith et al., 2006, p. 760). Multiple values are at risk in WUIs, and, as a result, mitigation in states, such as Colorado, entails high stakes for multiple parties that, often, have differing interests.

The case study for this project is Forsythe II, a highly-contested U.S. Forest Service (USFS) land management and fuel mitigation project in Colorado. This project has been debated by various stakeholders, including residents, government officials, and USFS land managers, because it would impact 2,460 acres of the Arapaho and Roosevelt National Forests, in Colorado (Jahn, 2016). Because U.S. wildland fire policy focuses, primarily, on WUIs (Stewart et al., 2007), the USFS and other stakeholders have spent an enormous amount of time and energy on Forsythe II. Typically, government wildfire mitigation proposals have a fuel treatment component that includes the burning or removal of excess vegetation (e.g., trees), to prevent fires from spreading or growing in strength (Zimmerman, Lasko, & Kaufmann, 2014).

Forsythe II is a revitalization of a 2015 USFS proposal that was blocked by a vocal group of citizens in Nederland, Colorado (located in Boulder County). Forsythe II has the following goals: "restoring the forest . . . reducing the impacts on watersheds in the event that a wildfire does occur; and providing opportunities for neighboring property owners to create defensible space on the National Forest boundary near their homes" (Brennan, 2016, para. 4). In the Forsythe II case, some residents have argued that this strategy unnecessarily and adversely affects local wildlife and the forest. However, if this fuel treatment project does not occur fully, and land management agencies are unable to perform their work due to the discord happening in the local community, wildfire risk will increase (Stein et al., 2013).

This study investigates the discord and framing of the local landscape by both residents and land managers. In response to the USFS proposal, local residents formed the Opposition Group (a pseudonym) to protest Forsythe II. This group argues that USFS's proposed methods to conduct fuel treatments on National Forest land will cause more damage than good to the local forest. The Opposition Group has proposed an alternative solution that calls "for minimal forest cutting and an emphasis of monitoring and patrols" (Brennan, 2016, para. 11), which the USFS took into consideration but deemed to fall short of the project's goals. As a key stakeholder, the Opposition Group's voice of dissent halted the 2015 proposal. In July 2017, the project was updated to incorporate residents' feedback, with the Forest Supervisor noting the importance of the public in making land management decision: "Thanks to the valuable and important input we received, we were able to come to a decision that honors the relationship this community has with the National Forest out its back door, while also enhancing it for future generations" (U.S. Department of Agriculture, 2017, para. 2). Despite USFS optimism, conflict remains, and WUI residents continue to criticize the proposed plan.

Researcher Access and Positionality

I have been a research assistant since February 2017, working on a project that focuses on the Forsythe II project implementation. This project is led by Dr. Jody Jahn (University of Colorado Boulder), the Principal Investigator, and her research collaborator, Dr. Hannah Brenkert-Smith (University of Colorado Boulder), who received a research grant from the U.S. Department of the Interior, Joint Fire Science Program, with human subjects approved by the University of Colorado Boulder under IRB #16-0613. The data from the grant project supplemented my efforts to recruit and gather information from interview participants.

As a research assistant under the grant, I have attended local meetings comprised of residents and representatives of land management agencies, assisted with conducting focus groups, and conducted individual interviews with key stakeholders involved with Forsythe II. As a member of this research team, I have engaged in ongoing conversations about recruitment of residents and data-collection activities, and research team debriefings following focus group and individual interviews. I utilized the corpus of focus group and individual interview data collected over the course of this thesis project. Additionally, I drew from open-ended survey questionnaire responses from residents, and public comments from residents (available on USFS's website) regarding the Forsythe II project.

Since Forsythe II is a political issue, my research positionality is important in how I approached studying this conflict. Regarding my researcher positionality, Frey and Castro (2016) proposed four positions that researchers take toward groups that they study, based on the intersections of researchers' identity congruence and emotional comfortableness with groups studied: congruent–uncomfortable, congruent–comfortable, incongruent–uncomfortable, and incongruent–comfortable. My position vis-à-vis the group studied is that of being incongruent

and comfortable, as I do not identify with the Opposition Group, land management agency employees, and/or local residents I am studying but I am comfortable with emotions and feelings that have arisen for me during this research study. I have no personal connection to Nederland, Colorado, a town where a vocal portion of residents have opposed Forsythe II, nor do I have any personal connection to the surrounding Arapaho and Roosevelt National Forests. I do not have a strong opinion about Forsythe II and the outcome of this fuel treatment plan by the USFS; however, I can emphasize with both supporters of the plan and those who oppose it.

Data Collection

This research study drew from multiple datasets, including: (a) individual and focus group interviews conducted with residents who supported and opposed Forsythe II, (b) observation of public meetings about Forsythe II, and (c) public comments from the USFS database and open-ended written responses gathered as part of a survey of people living in the Nederland zip code (see Appendix A). Throughout the data-collection process, I debriefed with research team members after attending public meetings and conducting focus group and individual interviews, and I took detailed notes of my observations.

Public Meetings

Researchers from the team have observed and attended nine public meetings (spanning 2 years), in which Forsythe II was either a main topic of discussion or an agenda item. These meetings included two open houses that were hosted by the USFS, a public forum, a mediated objector resolution meeting (where the Opposition Group and USFS discussed the Opposition Group's objection to Forsythe II), a town council meeting, and four multiparty monitoring group gatherings. Forsythe II's project update (in July 2017) proposed that residents could take part in multiparty monitoring groups, with multiparty monitoring having the following priorities:

"Compliance/Implementation: Did USFS do what they say they would do? Was it legal? Effectiveness: Are we effectively accomplishing goals and objectives? and Validation: Is there a better way to accomplish goals and objectives?" (Colorado Forest Restoration Institute, 2017, para. 2). The multiparty monitoring group meetings were hosted by the Colorado Forest Restoration Institute (CFRI) at Colorado State University (CSU). The purpose of the CFRI is to "lead collaborations between researchers, managers, and stakeholders to generate and apply locally-relevant, actionable knowledge to inform forest management strategies. Our work informs forest conditions assessments, management goals and objectives, monitoring plans, and adaptive management processes" (CSU, n.d., para. 2). At the CFRI-led meetings, Institute members asked residents to assess how they could work together with the USFS during the Forsythe II project. Two of these CFRI gatherings were field trips taken into the forest with residents, land management officials, and CFRI mediators.

I had access to and reviewed recordings, detailed fieldnotes taken by myself and by fellow researchers, and transcriptions of these public meetings. The detailed fieldnotes recorded key issues on which residents focused, and they highlighted residents' interactions with each other and with public officials. I also attended two multiparty monitoring meetings.

Interviews and Focus Groups

Interviews took place on the University of Colorado Boulder campus, in people's offices, or at the Nederland Community Center. Eleven individual interviews and four focus group interviews were conducted with Nederland residents, which included a mix of people who supported and opposed the Forsythe II project. Interviewees were obtained from local meetings (described above), public comments expressed on USFS's database, and from network sampling

that asked participants to recommend others who might be interested in being interviewed. All prospective participants were contacted via email to recruit them and schedule an interview.

The interview protocol (see Appendix B) employed a standardized format for each interview, to "delimit[s] in advance the issues to be explored" (Patton, 2002, p. 343). The protocol asked residents to speak about the following points: (a) their attachment to the physical landscape and its uniqueness (if any), (b) how they viewed the healthiness of the forest, (c) what USFS's role should be in land management decisions, (d) their social values of living in the WUI, and (e) their expectations if a wildland fire occurred. Interviews lasted 45–90 minutes in length, were recorded after obtaining interviewees' consent, and transcribed, resulting in 197 single-spaced pages.

Because researchers "cannot observe everything" (Patton, 2002, p. 341), such as at the public meetings (described above), we also conducted focus group and individual interviews with residents. *Focus group* interviews allow for dynamics that are not observable in individual interviews, with participants often being more candid when speaking with their peers, although participants can also be uncomfortable sharing freely in front of others (Leeman & Novak, 2017). Because focus group participants speak with and in front of their peers, often, they open up about the topic being investigated and build on others' comments; however, focus groups also may cause participants to edit what they say due to the presence of either known or unknown fellow focus group members (Leeman & Novak, 2017). Because of some of the disadvantages of focus groups, one-on-one interviews also were conducted with people who preferred to express privately their views regarding Forsythe II.

Focus groups were conducted at the Nederland Community Center, with a variety of members in each focus group who opposed or supported Forsythe II. Four focus groups were

conducted, each with three to five participants, for a total of 19 participants. The same interview protocol was then employed to conduct the individual interviews, with flexibility for the researcher to ask probing questions. Focus groups lasted 60–120 minutes in length, were recorded after obtaining participants' consent, and resulted in 143 pages of single-spaced transcription.

Public Comments and Survey Comments

The U.S. Department of Agriculture's USFS (1976), in accordance with the National Forest Management Act of 1976, requests public comments on land management decisions, such as Forsythe II. Hence, in addition to individual interviews, focus groups, and observation, I accessed public comments that have been submitted to the USFS about Forsythe II, reviewing them for contextual information about residents' opinions of the project. People who offered public comments (both pro and con) were invited to be interviewed individually and/or in focus groups.

In addition to public comments, a survey questionnaire had been distributed by the research team (in Summer 2017) to 1,897 households from the zip code 80466, the area affected, primarily, by Forsythe II, with 637 questionnaires completed (33.6% response rate). Because I focused only on residents' general opinions of the project, I reviewed only the open-ended responses to the question: *"*Are there concerns that were not raised in the survey questions?" That open-ended question received 280 written responses that addressed several concerns that were raised in the individual and focus group interviews.

Data Analysis

I analyzed the qualitative data that were collected employing an iterative process (Tracy, 2013), working back and forth between theory (sensemaking frames and place attachment

theory) and emerging findings from the data. Initially, I had posed three research questions for consideration: (a) How do WUI stakeholders frame their identity when discussing their relationship with their physical environment? (b) How do WUI stakeholders frame their use of space and the WUI's unique and differentiating features? (c) How do WUI stakeholder make sense of and frame emotional connections to space? However, in analyzing the data, they pointed to broader questions of how residents inscribe sense on physical landscapes; moreover, sensemaking was emerging in public meeting interactions. Hence, I revised my investigation based on those insights, and posed two research questions: (a) How do WUI residents inscribe sense onto the WUI landscape? (b) How does spatially inscribed sense about contested spaces influence sensemaking efforts regarding managing the landscape (e.g., in public forums/discussions about land management decisions pertaining to that space)?

Data were analyzed in two phases to make sense of whether and how people used spatial frames to explain their support of or opposition to Forsythe II. In the first phase, I analyzed the data using primary-cycle coding and by developing a codebook. I read the transcripts line by line, labeling what people talked about with respect to the physical landscapes and multiparty land management decisions. In the second phase, I used secondary-cycle coding (Tracy, 2013), a process of interpreting the primary codes that I noted and organizing them into interpretive concepts. I did secondary-cycle coding by reviewing the primary codes, re-reading transcripts to determine more focused secondary codes, and conferring with the research team on their coding process. I used NVivo qualitative data analysis software to highlight codes during this phase of the coding process. As part of the coding process, I used both *deductive codes*, a priori researcher codes that are derived from scholarship, and *inductive codes*, those that "come directly from the data and are developed from reading the data and noting the issues raised by

participants" (Hennink, Hutter, & Bailey, 2011, p. 218). The deductive codes originated from the review of literature on sensemaking frames and place attachment (see chapter 2), and they focused on people's use of identity construction language and emotional language about the WUI environment, and their use of spatial sensemaking frames. Inductive codes were created as I read through the data, noting what stakeholders mentioned frequently or deemed to be important, especially with regard to land management decisions (Hennink et al., 2011).

Finally, I noted transformations in spatial sensemaking frames and framing of land management decisions in conversations between residents and land managers. I marked interview passages that indicated sensemaking frames, such as when residents commented on a surprising or ambiguous set of circumstances that related to the physical landscape. I, then, looked, specifically, at spatial framing repertoires, patterns of frames that are produced from people focusing on related parts of an experience with their physical environment when they make sense of interactions with other people about physical landscapes. Additionally, I noted common themes that held together frames that comprised both perspectives, of support for and opposition to Forsythe II. The notation of framing patterns about the physical environment was important, and I looked at these patterns for an array of ways that supporters of and those opposed to Forsythe II connected their sensemaking (i.e., inscribed sense) to specific parts of the physical landscape. These frames emerged in the interviews conducted and in public meetings observed between federal land management organization and members of the public who live near the proposed treatment area, particularly in back-and-forth conversations about specific fuel treatment techniques, such as clear-cuts, and their perceived impacts on the environment and community.

CHAPTER 4
OPPOSING AND SUPPORTING SPATIAL FRAMING REPERTOIRES

This study contributes to literature on sensemaking frames and framing repertoires by exploring *spatial framing repertoires*, sets of sensemaking *frames* that inscribed meaning onto landscapes. Specifically, as stakeholders participated in public meetings about land management decisions, they invoked their spatial framing repertoires to make a difference in unfolding interactions. The first research question addressed what comprises a *frame* in a spatial framing repertoire, asking, "How do WUI residents inscribe sense onto the WUI landscape?" The second research question addressed how people participate in *framing* in public discussions; specifically, how they invoke their framing repertoires to make a difference in interactions among stakeholders, asking, "How does spatially inscribed sense about contested spaces influence sensemaking efforts regarding managing the landscape" (e.g., in public forums/discussions about land management decisions pertaining to that space)?

Contested spaces inscribed different meanings for different stakeholders in Forsythe II. Contested spaces are marked by physical artifacts that actors bracket as they make sense of their landscape. This sensemaking is influenced by their place attachment to specific environments, and by collective actors influencing one another during discussions of specific environments. These findings introduced the concept of "spatial framing repertoires," particularly how people's experiences of physical landscapes are symbolic, enacted, and made sense of collectively. To understand spatial sensemaking, particularly in regard to materiality and physical artifacts, I review findings from this study, which are aggregated findings of multiple contested spaces in the community. Contested landscapes in this study included previous U.S. Forest Service (USFS) fuel treatment sites (e.g., clear-cuts in the West Magnolia area), and USFS's proposed fuel treatment sites. These spaces became contested because of differing perceived impacts of

fuel treatments by opponents and supporters of Forsythe II. For example, those opposed to Forsythe II argued that the trail system and its enjoyable hiking was altered by previous fuel treatment work that was done to West Magnolia. In contrast, those who supported Forsythe II argued that those fuel treatments created fire breaks for firefighters, which provide safety during wildland fires.

There were multiple contested spaces in the data, but the findings from this study highlight themes that were relevant across all of the contested spaces. Next, I discuss answers to both RQs and how collective spatial sensemaking occurs when specific contested spaces were evoked. First, I focus broadly on what the landscape inscribed to those in opposition to land management decisions; these findings fall into three themes: *violated expectations*, *degradation* (due to transients and past clear-cuts), and *mistakes* (from contractors or other decisions). Second, I focus broadly on what the landscape inscribed to those in support of land management decisions, which included the themes of *resilience* (by the forest, itself) and *safety* (for the community). Third, I focus on how spatially inscribed sense about contested spaces influenced stakeholders' sensemaking efforts regarding managing the landscape (e.g., in public forums/discussions about land management decisions pertaining to that space), particularly as actors drew upon their spatial framing repertoires. Stakeholders' sensemaking efforts revealed how the clash of two oppositional sensemaking frames affected the conflict by leaving no room for ambiguity. The findings highlight how those in support and opposition became entrenched further in their positions, which exacerbated this intractable conflict.

Overall, the findings revealed that what those in support and in opposition of Forsythe II inscribe on the landscapes showed a push–pull between retrospective and destructive sensemaking by the opposition and forward-looking, aspirational, and renewal sensemaking by

those in support. The retrospective and forward-looking themes uniting each side's sets of frames comprised the central themes that hold together their framing repertoires. Each side's spatial frames utilized similar language and intersected in their descriptions of various contested spaces. For example, both sides evoked the beauty of the forest, but the opposition saw the beauty in the past, whereas supporters saw beauty happening in the future. Their spatial frames intersected at multiple points, and the physical landscape was inscribed similarly with regard to both sides' counterarguments.

Inscribing Sense onto Contested Landscapes

Findings for the first research question revealed that residents inscribed different sense making onto the same contested landscapes, depending on whether they opposed or supported the fuel treatment plan. I start by considering residents' opposition frames, then considering support frames. I then discuss how the opposition and support frames make up two unique spatial framing repertoires.

Opposition Frames

Overall, residents who opposed the fuel treatment plan inscribed contested landscapes with memories of past land management actions and emotional associations, including: (a) violated expectations, (b) degradation/loss, and (c) prior land manager mistakes. Each of these inscriptions are described below.

Violated expectations. Land management activity in this area is not new, as it is a vulnerable area for wildland fire. Previous fuel treatment efforts by the USFS violated residents' expectations of how fuel treatment should look in terms of promoting the forest's health. Residents expressed a violation of their expectations in regards to previous land management activity, particularly, in the area of West Magnolia—both with the trees cut down by land

management agencies and the lack of follow through on the part of the USFS. As a resident noted, "When they [USFS] came through to treat these forests in 2014, they treated West Magnolia in 2012, and did all of this massive clear-cutting that started getting people upset." This quote demonstrates how WUI residents did not like the changes that happened to their landscape, which seemed to have a bigger impact than the lack of follow through by the USFS. Residents thought that there would be some thinning of the trees in the West Magnolia area, but it turned out to be large clear-cuts, which upset them.

Changes to the landscape changed how WUI residents used it, and those uses, such as recreational activities, were enactments of their personal identities. These changes, clear-cuts to a known hiking area, were jarring to people, because their perception was that they no longer could not engage in activities on the landscape that they associated with making them who they were. This violation of expectation shifted residents' place identities.

Sense is made retrospectively by comparing the previous look of the land to its current appearance without trees by residents. However, residents did not abandon the space; they still were tied to it, and they referenced specific landscapes in their fight against Forsythe II. A resident noted in a focus group, "I've got to say I feel pretty . . . up on West Magnolia. When I walk up there and it's windy, it's aggravating. I feel anxious, even, when I get up there, until I get back into the trees." Residents, thus, had an emotional relationship with the landscape, even though some have stopped going physically to certain contested spaces, and residents drew on that emotional connection as proof that their trust had been violated.

Residents' knowledge of the physical landscape heightened the sense of violation that they perceived had been engaged in by land management agencies. Ways in which they inscribed meaning onto the landscape lent credibility to their experiences, and this place

attachment affected their sensemaking about the landscape. Temma, a vocal leader of the Opposition Group, said:

> We have a different social value [than the USFS], and so when [a land manager] comes in and says, "Well, we're just gonna cut down this forest; it's for the health of the forest, and it'll be good for you," without consulting us, it's a slap in our face. It's like, "How do you know what's good for us? We live there. We understand this forest a lot better than you do. Our lives are tied up in it."

The "slap in the face" language that Temma utilized demonstrates the shock that those who oppose Forsythe II have related to their perception that land management decisions have not acknowledged residents' emotions and feelings. The fuel treatment plan goes against the anticipated outcome that residents had in mind for the forest around them. Furthermore, this quote demonstrates that residents inscribed Forsythe II as a loss to the landscape as well.

Degradation and loss. Residents who opposed Forsythe II also have made sense spatially by framing USFS policies as a loss of the beauty and health of physical elements of the landscape (trees), as well as noting the degradation of the landscape by transient individuals who camp illegally (due to lack of, or frustration with, homeless services that are available in the large metropolitan area nearby). Residents discussed the beauty of the land, and they linked Forsythe II to the degradation of this beauty. During an interview, Katherine spoke to the emotional and physical repercussions of loss in the landscape:

> I had a grief breakdown that day, as I told you, at that [meeting], and I said, "I feel literal grief at the loss of this forest, every day. I understand the scientific perspective, but it's something different for me, living immediately adjacent to this beautiful forest." It's now gone [due to a large fuel treatment clear-cut], and, I think, unnecessarily.

Residents expressed similar grief about other spaces that had been altered by land management decisions in the past. Residents would become visibly shaken when speaking about certain spaces and what they used to be, and, consequently, they are fighting to not let happen again. In an interview, Mira noted, "So then, we started talking a little bit about the social values, in that we were talking about the loss of this area and just the way it felt," and the USFS seemed to not take into account those feelings in its decision-making process. Residents expressed loss and regret about what had been done, and their opposition efforts now were very much anchored by what had happened in the past.

Additionally, the presence of transient individuals has affected the place attachment to certain physical landscapes, such as West Magnolia. In an interview, Jake, a resident, said, "Now, West Magnolia, I don't want to be up here. Why? Because of all the homeless people." In particular, many residents identified the transient population as a significant fire threat, because they light illegal warming campfires in high-risk wildfire areas and do not monitor them, and the transient population does not clean up evidence of their illegal camping, which has led to the forest being, in a resident's words "trashed."

Prior mistakes. In past mitigation efforts, the USFS did not provide enough oversight on the contractors who were performing the fuel treatment activities, and as a result, the contractors cut trees in such a way that residents believed that they implemented the "incorrect" scientific prescription. Such prior mistakes were common among those who opposed Forsythe II, and, as a result, they tended to oppose future land management activities, because they anticipated the same mistakes would be made again. This inscription of prior mistakes is connected to the inscription of violated expectations by residents. There was a lack of trust in

the USFS due to the perception of previous work being inadequate and misrepresented to the public. A survey comment by a resident said:

> Healthy forests support wildlife, and their beauty is the main reason I live in the mountains. From what I have observed, the USFS has clear-cut large areas along Magnolia, in the name of "fuel reduction." It was my understanding that they were supposed to only thin the forests, not clear-cut them.

Other residents described historical mistakes that they believe the USFS have been making in land management decisions. Sophie in a focus group said, "They have been doing this mistake [the clear-cutting approach to fuel treatment] for decades, and it seemed that some of them are waking up, but some of them are not ready to see the truth. And it keeps on going on, and on, and on when we talk to people who had an experience with the National Forest where they think that they are really behind in their approach." These perceived mistakes are inscribed upon the landscape by residents and tied to the scientific approach

Residents who opposed Forsythe II used the landscape to inscribe violated expectations, degradation and mistakes, focusing on the past, which is carried forward throughout public meetings and forums. Each of these frames were grounded in place identity, an enactment of residents' identities and place dependence, a strong association with the physical landscape. The residents inscribed specific and unique meanings on to the landscape based on their prior experience and in anticipation of their future experiences. For example, residents enacted their identities in these landscapes through the recreational activities they find defined their personalities. As Temma said above, their "lives are tied up in" the forest, and this entanglement resulted in the above frames.

Support Frames

Residents who supported the fuel treatment plan inscribed contested spaces with forward-looking aspirational goals for the landscape, including a) forest resilience, and b) community safety.

Forest resilience. Those interviewed who expressed support for the Forsythe II project, referenced previous land management work that they saw producing a healthier forest. The land mitigation work done here is viewed as an aesthetically pleasing spot in the community, despite protests from other residents that the clear-cuts in the area have destroyed the area. For instance, a focus group participant described the future of the forest: "I look at West Mag and I don't see a waste land; I see what it's going to be in a few years, as the understory and the Aspen come in, and they're colorful, and I see, potentially, a much healthier forest." Proponents of Forsythe II spoke to the future of the forest and what fuel treatment work has created versus what fuel treatment work has destroyed. Another focus group participant (from a different focus group than the previous quote) noted, "you go up into West Mag, and you have the little ponds, surrounded by some forest, the big Aspen groves that are now coming back, the open meadows, the views, the diversity of it, where you can actually experience different, almost mini-ecosystems in one hike." Many residents (both for and against Forsythe II) identified with their ability to use the landscape around them for recreational activities like hiking. Those who supported Forsythe II recognized the beauty of the land after land mitigation activities and spoke to the future of the landscape.

Community safety. Residents who supported Forsythe II spoke to the larger goals of the project, which was to protect the community from wildland fire. They inscribed community safety upon the landscape. Those who opposed Forsythe II described fuel treatments as futile (e.g., the forest will burn no matter, so nothing we do matters) and as a result, opposed any

changes to public land. In contrast, those who supported Forsythe II felt a responsibility to support fuel treatments that anticipate and respond to climate changes and wildfire risks. A focus group participant noted, "We're not only creating a more—a safer community, but we're encouraging wildlife and just making a healthier forest. So I just take a longer term perspective, and I can see West Mag in 5 years, and it's gorgeous, as opposed to just seeing a wasteland." Thus, the forward-looking, aspirational language of supporters was in contrast to the degradation and loss language utilized by those opposing Forsythe II. Justin, a volunteer firefighter, spoke to a bigger picture perspective, saying "we need to keep the community safe and be responsible to our neighbors and the forest." That sense of responsibility translated to trust and support in the USFS's proposed fuel treatment options to protect the community from wildland fire.

Both of these opposition and support frames are grounded in place attachment, specifically place identity and place dependence. The residents have inscribed specific and unique meanings on to the landscape based on aspirational goals that evoke safety for themselves and their community. For example, residents enacted their identities in these landscapes through future beauty and the impact that has on not just them but on the uniqueness of the place they live. Those who have opposed Forsythe II take a retrospective approach as opposed to supporters who took a forward-looking one. Past actions are what held the opposition's spatial framing repertoire together; while the forward looking and aspirational talk holds the supporters' spatial framing repertoire together. Residents who supported the fuel treatment plan inscribed contested spaces with forward-looking aspirational goals for the landscape, including community safety and forest resilience.

I move from talking about frames of each side, those who support and those who oppose Forsythe II, to discussing each side's framing repertoires, the "pattern of highlighting similar

aspects of experience to give a coherent account of what is going on that is continuously shaped and reshaped in interactions" (Brummans et al., 2008, p. 26). Each side had a few individual frames: violated expectations, degradation, mistakes, and forest reliance and community. Taken together, the three frames that comprised the opposition viewpoint, contributed to their framing repertoire, while the two frames that compromised the supporting viewpoint contributed to their framing repertoire. The next section explores how the opposition and support framing repertoires held together.

Framing Repertoires

Actors draw upon *framing repertoires* "as a pattern of highlighting similar aspects of experience to give a coherent account of what is going on that is continuously shaped and reshaped in interactions" (Brummans, 2008, p. 26) as they engage in sensemaking. This section discusses how the sets of opposition and support frames were each held together by a different theme that lent plausibility to the sensemaking accounts each side was developing.

Opposition: Retrospective and destruction framing repertoires. Using the opposition's three frames, violated expectations, degradation, and mistakes, residents made sense retrospectively of the issues of Forsythe II and their physical environment, creating framing repertoires. Additionally, the framing repertoire was held together by a theme of destruction—the idea that the forest has been and will be destroyed, losing the feeling of peace that it brought residents. As a resident in an interview elaborated:

> That was something we had to confront for the first time, you could call it "naivety" on our part, but we value the forest for the peace it brings, for the recreation, for the beauty, for the sense of history and place.

Because residents framed fuel treatment activities as destroying the peace of the forest, they struggled with looking forward with optimism about forest management. Residents anticipated

that mistakes would happen again with any future fuel treatment work that land management agencies proposed. Instead, they expressed desire to leave the forest to recover and return to its previous state. Anne, a resident of the Big Springs area, said in a focus group, "That would be best case scenario, that these areas that are being damaged now, will be allowed to regrow and be better managed. But, as people have already mentioned, what's returning is not the same as what was there before". In other words, Anne shared that residents wanted to have faith in the land management process and wanted to see the forest grow back as it once was, however, she did not see that as being possible based on previous interactions with land management agencies.

Residents who opposed Forsythe II emphasized their emotional connection to the physical landscape, focusing on the previous state of the forest as a peaceful place. However, supporters of Forsythe II also acknowledged an emotional connection to the physical landscape. Supporters' framing repertories considered the issues of Forsythe II and their physical environment in a more forward-looking manner.

Support: Forward-looking and renewal framing repertoires. The two frames of those in support, forest resilience and community safety, considered the issues in a forward-looking manner. This framing repertoire was held together by a theme of renewal. In an interview, Fabin elaborated on the benefits to the community of a healthier forest and the reaction of those who opposed Forsythe II:

> I think anything they can do would be positive, so I think that a healthy forest is a more enjoyable forest to be in. You have more wildlife and more diversity. You can, it's not just trees with a bunch of needles on the ground underneath because nothing else will grow. I think that it will just be a much more positive experience. I enjoy going for hikes and riding my mountain bike through some of the other treated areas, like on the other

> side of West Magnolia. I know that people were aghast and horrified at that project. I think that's just a wonderful place now, because I used to go there and do a lot mountain biking before they did the treatment and so I can see a huge difference between now and then. It's much better now. I'm looking forward to Forsythe II being a similar experience.

Residents who supported Forsythe II talked about making smart management decisions that would keep the forest and residents safe in the future." Justin, a volunteer firefighter, described why he supported Forsythe II in an interview:

> I'm in support of the work the USFS is doing with Forsythe II because the goal of the treatments is to enhance public safety. These fuel treatments create areas where aerial retardant will be more effective; they make a difference in slowing down the fire; and they set the stage for firefighting resources to actually make a difference. They are necessary because in a WUI area, the forest can't be left to manage itself. We have to actively manage it because we are living in it and because we live there we are interfering with its ability to let its natural processes take place. We have to make decisions about what to do with it so that we can make sure the people who live here are safe.

The *support* framing repertoire is held together by the assumption that change is necessary to keep the community safe. As Justin noted, because there is ongoing fire risk to residents, mitigation and fuel treatment work must be done for public safety. Similarly, climate change is invoked as a reason to think toward the future when thinking of the physical landscape. Will, a resident, said in a focus group that climate change is influencing "the frequency, the intensity, the duration, the scope the fires are increasing." The increasing fire danger inspired

residents to support Forsythe II as they were involved in conversations about the future of their communities and the landscape.

Actors drew upon spatial framing repertoires as they collectively made sense of their physical landscape. These two spatial framing repertoires: retrospective and destruction and forward-looking and renewal were carried forward throughout public meetings and forums. The next section will describe findings for the second research question and how sense is collectively made in public meetings and forums.

Sensemaking and Framing in Public Meetings and Forums

The second research question asked, "How does spatially-inscribed sense about contested spaces influence sensemaking among stakeholders regarding managing the landscape (e.g., in public forums/discussions about land management decisions pertaining to that space)?" Findings revealed that residents inscribed sense onto the same contested landscapes in different ways depending on if they opposed or supported the fuel treatment plan. The way residents mentioned the above findings (e.g., contractors' mistakes) connected to the theme of violated expectations and prior mistakes by those who opposed Forsythe II. Based on these past mistakes, opposition residents assume future actions will also be faulty, thus the micromanaging of the USFS.

The same issues comprising the support and opposition frames emerged in public meetings among stakeholders. Stakeholders who opposed fuel treatment activities often mentioned prior mistakes by the USFS as reasons why they did not support Forsythe II treatment activities (i.e., retrospective framing repertoire). On the other side, residents who supported fuel treatment activities often mentioned community safety from wildland fire as a reason why they were in favor of Forsythe II treatment activities (i.e., forward looking framing repertoire). Public meetings included two open houses that were hosted by the USFS, a public

forum, a mediated objector resolution meeting, a town council meeting, and four multiparty monitoring group gatherings. I will discuss three excerpts from public meetings that demonstrated how opposing spatial framing repertoires collided as stakeholders discussed Forsythe II. Three excerpts show how stakeholders' spatial framing repertoires have contributed to further polarization and intractability in the process of discussing Forsythe II. In particular, the findings show that opposition residents (a) remained unswayed by the argument that wildfire danger justifies fuel treatments, (b) considered ecological prescriptions irrelevant to the landscapes slated for treatment in Forsythe II, and (c) resisted recommendations from fellow residents for building common ground across stakeholders.

Remaining Unswayed by Wildfire Threat

Opponents of Forsythe II were not swayed by arguments that asked them to consider the future threat of wildland fire to the community. The following excerpt took place at a panel discussion on the Cold Spring fire, which was hosted by Mario, a forestry researcher from a nearby university, and which involved a panel discussion of the firefighting response to the fire by local volunteer firefighters, the USFS, local law enforcement, and other land managers. The Cold Spring fire posed a significant threat to the town of Nederland because it burned close to the boundary of a Nederland neighborhood. Land managers viewed the Cold Spring fire as a threat that was not a unique event, but rather a type of wildland fire threat to expect more of in the future. The discussion leading up to this excerpt involved the responding firefighters saying that the fuel treatment areas off Ridge Road were a key reason they were able to catch the Cold Spring fire before it would have destroyed the neighborhood. The firefighters emphasized that fuel treatment, similar to what would be done during Forsythe II, was key to stopping the fire. Two residents in the Opposition Group, Katherine and Valerie, questioned the value of what they

considered were actions destructive to the landscape: fuel treatments and using dozers to push trees out of the way and clear out areas of forest. Falcon (a firefighter), Derek (a USFS Engine captain), and Mario (a forestry researcher), engaged them in conversation about these land management techniques.

Excerpt 1:

Valerie:	The dozers that you sent to work in the fuels treatment [treated] areas off Ridge Road—were they able to work in those areas?
Falcon:	They were… [Dozers] help give us time for the hotshot crews to get in there. It just buys us time. Machines can do a lot of work, and the fuel treatment areas aligned critically for us.
Katherine:	What I don't understand is: what is it dozers do exactly to help the fire?
Falcon:	They build roads. They're building roads basically. They knock trees over, they can do a lot of work. They are not really popular in Boulder County, but when you fight fire around the country—Idaho, Washington—that's just what we use.
Derek:	…[W]e were trying to build fireline through jackstraw timber like this [weaves his fingers together]. We can't cut through trees when they are like that. Dozers push those trees apart so that we can build line, and hopefully drop the fire down out of the [tree] canopy and to the ground [where it is easier to control]
Mario:	So you [speaking to Valerie] brought up the importance of fuel treatments, the fuel reduction work. So I want to just transition here. Another part of this panel discussion is talking about those fuel treatments and what people were thinking—what kind of fire is expected when you have these kinds of fuel treatments already in place…
Falcon:	If a fire was getting up and rallying—would you want to have treated areas around you? I would. When you fuel mitigate around your home, and reduce fuels in the lands around it, you create a safe place for us to begin our work. The second reason is—we need an anchor. We need a place to start [fighting the fire]. And what better anchor—what better place to start the firefighting—than your backyard? I would want firefighters in *my* backyard starting to build that anchor. And lastly, you need to think of individual homes as heat sinks or fire brand sources. If one goes up [in flames]—even if it's a mile from another home—guess what? Even if you mitigated around your home, guess what? If one house goes up, we run the risk of losing all of them. There's a potential to lose all of them. These are several good reasons why we as land managers want to do this tree cutting.

In interviews, Katherine and Valerie expressed the opinion that the landscape should remain minimally or completely unaltered. Their questions toward the firefighters had an antagonist tone, stemming from their shared framing repertoire of destruction. This panel discussion

informational meeting was held in the first place to address the incredulity toward dozers and fuel treatments by the Opposition Group. Despite the best efforts of several people—Falcon, Mario, Derek—Katherine and Valerie remained unswayed by the appeal that fuel treatments would be strategically helpful for fighting future wildfires. On the forward-looking, aspirational side, Falcon said land management agencies want to do the cuts because it provides a place to begin the firefighting effort—to get hotshot crews and dozers in there, to get fire out of the canopy (where it cannot be controlled) to the ground (where it can be better controlled). This frame was more focused on future advantages of altering the landscape.

Discounting the Relevance of Ecological Prescriptions

The following example portrays how Opponents of Forsythe II would push back against the 'science' of the USFS and need for certain fuel treatment prescriptions. This second excerpt came from a multiparty monitoring group (MMG) meeting, where the Colorado Forest Restoration Institute (CFRI) at Colorado State University (CSU) took field trips into the forest with residents, land management officials, and CFRI mediators. The Forsythe II project is divided into units across thousands of acres. At the first field trip stop, Lodgepole Pine Unit 24, the USFS representative described the size of the unit, what fuel treatment would be conducted, and the goals of the treatment for those units. As the group walked around, a member of the Opposition Group, Chase, began to push back on the science behind the fuel treatment for this specific unit, and Betty, the facilitator, reminded him to listen to the expert. Harry, an employee of Colorado Parks and Wildlife, advocates for the benefits of Forsythe II. Phil, a member of the Opposition Group is, also, involved in this exchange.

Excerpt 2:

Chase: What studies have you done on *this* ecosystem, here in *this* unit?
David: None.

Phil:	((Scoffs))
Louis:	We haven't looked at this exact piece of land, but we know a lot about this ecosystem at this elevation, and its history with fire behavior.
Harry:	It's not just about fire or climate change, this area is a corridor for elk, and clearing it out gives elk a place to forage. F2 needs to be considered in the larger picture of other projects that create a corridor for elk migration.
Chase:	We understand that. We understand that.
Harry:	Forsythe II is good for wildlife. It is not harming wildlife.
Chase:	Yes, but we need to talk more concretely.
Betty:	Chase, if you ask an expert for their opinion, you need to let them finish.
Phil:	The elk are already thriving here.
Harry:	Not necessarily. We have herd objectives overall. We are not trying to grow or shrink the herd; we are trying to keep it at a sustainable level, especially in relation to human population growth in this area. As more people move here, and recreate in elk habitat, it pushes the elk onto private property, and we don't want that. Forsythe II gives elk a place to forage so they're not feeding on private property.

Harry evoked a forward thinking and renewal spatial framing repertoire, claiming that this will be good for wildlife. As the human population grows in the area, the plan would provide the elk a place to feed. Chase was understanding yet doubtful, questioning expertise, and said the present state for the elk is good enough. Chase's initial question was highly specific, "What studies have you done on *this* ecosystem, here in *this* unit?" because he was conveying that the science that Forsythe II is based on does not apply to these treatment areas that the group was touring. Chase wanted separate studies to be done on these particular units because he did not seem to trust the science. In response, Louis explained that land management agencies do generalize scientific findings from one ecosystem to other places with the same ecosystem so that is why separate studies are not conducted. The Opposition Group appeared to be trying to prevent fuel treatment methods that would greatly impact the landscape (e.g., clear-cuts) by disagreeing with the land management agency's ecological prescriptions.

Resisting Common Ground

In the following example, a separate group of Forsythe II stakeholders sent a representative to a multiparty monitoring group meeting and the representative revealed that this separate group was able to reach common ground on the same issues pertaining to Forsythe II, and while representing similar framing repertoires as found with the multiparty monitoring group. This excerpt comes from the multiparty monitoring group meeting where the representative, Laura, from the Design Advisory Team (DAT), a separate group put together by the Nederland Board of Trustees, provided an update on their separate process for two specific units that fell within Nederland city limits: Unit 1 and Unit 2. The city had a separate process to provide recommendations on those two units to the USFS. This group included members from the Big Springs neighborhood (who would be most affected by the decisions on the units), Town of Nederland officials, and the USFS. The recommendations were based on multiple perspectives, primary concerns were "viewshed" and overall fire reduction. DAT was able to reach common ground and move ahead on Forsythe II treatment recommendation for units within the city limits. In the excerpt below, Betty served as the facilitator, while Rod is a member of the Opposition Group.

Excerpt 3:

Laura: Well, I think, well, what stands out on the [DAT] process for me was that, um, the fire folks had a very strong input and opinion on this as well. And that was part of the reason that the town is really involved in this [Forsythe II project] as well. Because they are trying to use [Forsythe II] Units 1 and Unit 2 treatments as major fire breaks for the town of Nederland. Right? Particularly and um…

Louis: Because they [Units 1 and 2] are in the town limits.

Laura: Because they are in the town limits, exactly, so that's a huge objective

Louis: That's the, the difference between Units 1 and 2 compared to the other ones, these are within the town limits of Nederland.

Rod: So…the fire department…the fire department is--

Betty Ok, ok, hold on, hold on [crosstalk]

Rod: Scientific in this process--

Betty The fire department is--

Rod: Is not objective nor scientific in this process. They have one goal.

Betty: Perhaps.
Louis: But it's still a goal and objective of the overall project that we incorporated into this...
Rod: You don't need to incorporate it. I'm just saying that for more scientific, ecological, resiliency and social objectives. You may not be interested, you may not feel the need to remove as many trees, if the town fire department wasn't there saying remove those trees.
Laura: But what, what I would like to say as someone who was there in the room, who was having this conversation with these guys is, again, *everybody moved*, nobody stood their ground and did *not* compromise. The fire guys really *compromised* and so did we, and we reached something that the *majority of us were happy about*. Which we can talk about because it's quite a bit different than what's here in the blue lines. So we can probably get there.

According to Laura (who had previously been a vocal opponent of Forsythe II), the DAT group appeared to have made progress as opposing sides reached a compromise and agreement. DAT meetings were led by a member of Nederland's Town Council, who was unable to attend this particular multiparty monitoring group meeting to talk about the process. Instead, Louis (the USFS representative, who was also present at the DAT meetings), was asked by the council member to discuss the DAT meetings and what resolutions were reached. Laura also spoke about the process. Because the Opposition Group has been in an ongoing conflict with the USFS (who Louis had been representing throughout the process), the Opposition Group members were not interested in hearing what he had to say about DAT and how they were able to compromise. One could assume that if the Town Council member had been able to attend to describe their stakeholder discussion process, members of the Opposition Group might have been more willing to listen. Laura's sentiments on having everyone in the room and being able to come to a decision was largely lost on the multiparty monitoring group and not mentioned in the rest of the meeting. Rod from the Opposition Group, instead, focused on the priorities of firefighters and how they do not necessarily align with the citizens' perspectives on land management. This suggested an unwillingness by the Opposition Group to reach a compromise, their spatial framing repertoires remained firmly entrenched. However, the DAT was able to come to a

solution together about fuel treatment options for certain units in Forsythe II. The multiparty monitoring group continued to push back, questioned expertise, and evoked the three frames of past mistakes, degradation, and violated expectations.

Overall, the findings revealed what opponents and supporters of Forsythe II inscribed on their physical landscapes and how they evoked frames to represent their place attachment. These findings showed a push and pull between retrospective and destructive sensemaking by the opposition and forward-looking and renewal sensemaking by those in support, particularly in conversation in public meetings. Each sides' spatial frames related how their identities as WUI residents were being threatened or supported by the land management actions that Forsythe II proposed. For example, both sides evoked the consequences of land management decisions when both opponents and supporters of Forsythe II discussed the importance of their physical landscapes. By better understanding WUI residents' spatial framing repertoires and sensemaking, future land management decisions can potentially be preemptively managed to prevent entrenched frames and, therefore, entrenched conflicts.

CHAPTER 5

DISCUSSION AND PRACTICAL RECOMMENDATIONS

In previous chapters, I reviewed the sensemaking and framing process of wildland–urban interface (WUI) residents embroiled in a local land management decision conflict. I looked, specifically, at how WUI residents' place attachment informed their sensemaking frames about land management decisions. To accomplish the goals of this study, I put scholarly literature on sensemaking, frames and framing, and place attachment in conversation to situate sensemaking as occurring spatially. I proposed that participants involved in multiparty land management conflict use spatial framing repertoires. The case study explored in this thesis focused on a land management project by the U.S. Forest Service (USFS) in Boulder County, with interviews conducted with local residents who were in support of or opposition to the USFS's land management project, Forsythe II. Additionally, I observed public meetings where the main topic of conversation was the land management project, and I examined open-ended responses from survey questionnaire data. I used the data collected to note spatial framing repertoires. Findings revealed that supporters of Forsythe II used forward-looking and renewal spatial framing repertoires, whereas opponents of Forsythe II used retrospective and destructive spatial framing repertoires. These spatial framing repertoires were invoked in public meetings as residents made sense of their place attachment, further entrenching their framing repertoires. This entrenchment made a resolution to the disagreement over land management techniques seem unlikely. In this chapter, I discuss implications of these findings for scholars, WUI residents, and land management agencies. Finally, this section offers both practical recommendations for future land management disputes, limitations of the study and future research directions.

This study was influenced by Brummans et al.'s (2008) call that researchers study "disputants' patterns of framing changed over time or how they were enacted in actual

interactions/negotiations" (p. 47). By considering sensemaking as a spatially grounded process that is enacted over time these finding can be used to transform patterns of framing before a conflict emerges. By observing public meetings, patterns of framing were revealed in actual interactions about land management decisions. These frames were noted initially in individual and focus group interviews conducted with WUI residents about these land management decisions. These findings showed that supporters and opponents of Forsythe II shaped contested spaces and inscribed sense to them, to meet their respective arguments for or against certain land management decisions. These findings support the assertion in place attachment theory that people affect actively their landscapes and form connections to the place in which they have chosen to live, to satisfy their needs or wants (Manzo, 2003). These bonds were displayed in various ways by those in support and opposition of Forsythe II. For example, emotional displays, such as crying, occurred in the individual and focus group interviews. Additionally, in public meetings, residents would become upset and angry visibly. By observing these interactions in real-time at public meetings, I saw how residents made sense collectively during public discussion about land management activities.

This study revealed that the more stakeholders invoked spatial framing repertoires, the more entrenched they were in their arguments regarding Forsyth II, and the less willing they were to listen to the other side. This entrenchment is especially relevant in the findings for the second research question, as both sides displayed an entrenchment of emotions due to previous experiences with the physical landscape, an important element of place attachment (White, Virden, & van Riper, 2008). However, stakeholders' relationship with the environment continued to evolve for both those who opposed and supported Forsythe II, as those who were opposed to it focused on the past changes to the landscape, such as violated expectations,

degradation, and loss, whereas those who supported if focused on benefits of the future physical landscape. Importantly, supporters' and opponents' enactment of these physical landscapes (e.g., through recreational activities) grounded their sensemaking frames in their everyday activities and experiences in specific landscapes. These frames, then, affected how these stakeholders viewed land management activities that, potentially, could alter how they enact their identities in those landscapes.

Place Attachment, Sensemaking Frames, and Emotions

Emotions are a dimension of the self that develop in relationship to the physical environment (in addition to other contexts). The emotional dimension of place attachment kept WUI residents coming back to these public meetings and speaking their opinions on land management decisions. In the ongoing land management decision process, WUI residents' emotions are important, as those emotions keep them entrenched in conflict, as shown in the findings from this study. These emotions vary across WUI residents and land managers during the sensemaking process. The effects of stakeholders' emotions during sensemaking should be studied further, as Maitlist et al. (2013) recommended, because the variability of emotions on sensemaking demonstrates that scholars need to take a much more nuanced approach to understanding the role of emotions in comprehending sensemaking processes, particularly because these processes differ across those making sense and sensemaking contexts. The sensemaking that happened at public meetings, happened across sense makers, both those who supported and opposed Forsythe II.

Those in support evoked similar framing in conversations with opponents. They used their previous experiences with the land and specific contested spaces to ground themselves further into a perspective, which contributed to polarization between those who support and

oppose Forsythe II. Emotion is grounded in enactment and sensemaking processes. Research has found that certain figures in organizations can be *emotional buffers* in the sensegiving and sensebreaking process (Scarduzio & Tracy, 2015), people who, simultaneously, manage their emotions and engage with others' emotions. Emotional buffers deal with multiple stakeholders' emotions and maintain their emotions. In this study, those who act as facilitators, such as Betty, served as emotional buffers who enabled certain emotional displays by WUI residents. For example, in Excerpt 2, Betty said, "Chase, if you ask an expert for their opinion, you need to let them finish." She did not display her emotional reaction to the landscape, but, simultaneously, did encourage a certain course of action for Chase to take, to hold his emotions back to hear someone else's thoughts. These emotional reactions by residents are important to note and interpret.

Maitlis et al. (2013) argued that emotions can catalyze change in organizations. Emotional descriptions might act as sources of motivations for people to support or deny change, but, at the same time, those emotions can lessen their ability to interpret and make sense of certain situations. In the findings from this study, opponents of Forsythe II appeared to be less receptive to making sense collectively with those who supported the project. It is important that land management agencies pay attention to these emotional accounts, by both supporters and opponents of Forsythe II, as their emotional reactions can indicate the likelihood of change being accepted by them (Maitlist et al., 2013).

Opponent's Spatial Framing Repertoires and Intractability

Opponents of Forsythe II utilized frames and spatial framing repertoires that did not allow room for resolution of conflict with fellow stakeholders. The Opposition Group used several tactics to stall progress on Forsythe II, and it refused efforts by other stakeholders to

reach common ground in the community. The three excerpts given in Chapter 4 showed that these tactics in public meetings included remaining unswayed by wildfire threat, discounting the relevance of ecological prescriptions, and resisting common ground. Their methods of resistance contributed to intractability and polarization. However, intractability is not inevitable in multiparty land management decisions. For example, as shown in Excerpt 3, Laura's account of the Design Action Team (DAT), put together by the Nederland Town Council, demonstrated that common ground could be reached among multiple stakeholders in multiparty land management decisions. This parallel group to the multiparty monitoring group, DAT, was able to come to a compromise. Thus, it is possible for multiparty land management conflict to become less intractable as stakeholders' spatial framing repertoires shift into more positive and open frameworks. Below, based on findings from this study, I discuss practical recommendations for multiparty land management conflict that could affect future land management proposals.

Practical Recommendations for Multiparty Land Management Conflict

There is an increasing "practical significance" (Brown, Colville, & Pye, 2015, p. 273) of sensemaking work. Findings from studies of sensemaking frames during multiparty land management conflict, potentially, can be translated to prevent intractability in similar future conflicts. Decreasing intractability can be as simple as including WUI residents in more substantial ways during the planning process than is done typically. For example, when developing land management plans, WUI residents can be included from the beginning, versus being on the receiving (and reactive) end of a plan.

Furthermore, I recommend that land management agencies provide volunteer opportunities for people who evince retrospective and destructive spatial framing repertoires (i.e., those who are preoccupied with past actions but who, clearly, are dedicated to the

landscape). Building volunteer opportunities into future land management plans might promote a forward-looking renewal framing repertoire. Volunteer opportunities might include letting residents patrol trail systems, monitor transient campsites for illegal campfires, and observe government contractors' implementation of fuel treatment activities. A volunteer citizen patrol group could address the issue of illegal campsites that residents discussed in the destruction frame. Thus, this intervention builds on ways that people practice their lives in that space (e.g., hiking), by building in various opportunities into these WUI projects (i.e., their place attachment).

By building volunteer opportunities into future land management plans, and by having one, clear message, land management agencies can engage in sensegiving that promotes WUI residents having forward-looking frames. One way for land management agencies to get WUI residents to evoke forward-looking renewal, spatial framing repertoires is by encouraging dialogue and interaction between and among stakeholders. Enhancing interaction and dialogue between and among parties involved has the potential to generate positive outcomes in environmental conflicts (Quigely, Dogbey, Che, & Hallo, 2014). Sensemaking and framing, thus, can be used to transform such disputes (Putnam, 2010). For example, Putnam (2010) advocated that an important factor in changing the direction of multiparty disputes is to promote coconstructed sensemaking among stakeholders. To accomplish that goal, land management agencies can involve opposing stakeholders in joint storytelling, as well as create new rituals among those embroiled in conflict. Joint storytelling can give stakeholders shared memories about their physical landscapes, and, thereby, it can help each side to understand its place in the conflict. For multiparty land management conflict, by creating collective rituals, a mutually developed fresh understanding of the dispute can be enacted. If land management agencies are

encouraged to look at conflict from the communication approaches of framing and sensemaking, there is an opportunity to intervene and accomplish creative solutions that acknowledge the complexity of these issue and that alter multiparty land management conflicts.

Limitations of Study

Although this study yielded important practical and scholarly findings, these findings were limited in several ways. This project attempted to understand a large scale multiparty land management decision in a tight knit community in Colorado. First, my own researcher positionality presented challenges as discussed in Chapter 3. The role of timing presented limitations in my full understanding of the multiparty land management decision. I was not involved with Forsythe II from the beginning, I entered a conflict that had already begun, therefore, I was not able to fully study the evolution of spatial framing repertoires by residents. Additionally, I lacked prior knowledge of Forsythe I, a project where residents perceived that mistakes were made by land management agencies. To address this concern, future researchers could be embedded in a land management agency to understand the full cycle of the process. Second, focus group and interviews were conducted with mainly residents in opposition of Forsythe II. A more diverse group of supportive and indifferent residents could have yielded the emergence of differing spatial framing repertoires. However, it was difficult to recruit this population, particularly those that were indifferent to Forsythe II because they were not invested in this land management decision. Third, the interview protocol could have asked for participants to recall conversations about Forsythe II with those who had opposing views to understand the articulation of frames from those that did not evoke them. As this study involved spatiality, interviews conducted in the actual spaces that residents discussed could have also

proved fruitful. This study was constrained by timing, methodology, and participation of residents, all of which could be addressed in future research.

Future Research Directions

Future research about sensemaking, frames, and place attachment should continue to push on how people's sense of place affects their sensemaking processes and frames during conflict. Maitlis and Christianson (2014) encouraged scholarship in sensemaking that focused on *sociomateriality*, the "deeply constitutive entanglement of humans and organizations with materiality" (Orlikowski & Scott, 2008, p. 466), on which this study touched. By focusing on the entanglement of WUI residents with their physical spaces, future research can explore why residents chose to live in WUI spaces where the threat of natural disasters is high. Moreover, because this case study focused on a specific land management conflict in Boulder County, Colorado, it would be beneficial to look at multiple cases across the United States and world, to further understand spatial framing repertoires and how, potentially, they are similar and differ in various contexts.

Maitlis and Christianson (2014) also pointed to the need to study further effects of emotions in sensemaking processes. Emotions can affect how sensemaking begins and when it ends, and the impacts that sensemaking can have. Future research, thus, could probe further with WUI residents on the roles of their emotions, as well as observe their emotional rituals with physical landscapes.

Conclusion

This study, set in the context of the wildland–urban interface, explored how residents' and land managers' experiences of space and place informed their spatial framing repertoires about land management decisions. This study, thus, combines an understanding of sensemaking

frames literature with conceptualizations of place attachment—particularly, place identity and place dependence—to extend in a significant way understanding, through spatial framing repertoires, of WUI stakeholders and land management decisions. A better understanding of spatial framing repertoires can lead to creative and innovative solutions in the conflict that is occurring with respect to Forsythe II and with regard to other land management decisions (Maitlis & Christianson, 2014). These findings serve as powerful reminders that underestimating residents' place attachment to the physical landscape in the WUI environment during sensemaking processes can lead to the creation and entrenchment of conflicts. Such entrenchment, ultimately, can increase communities' risks of being affected negatively by wildland fire.

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Appendices

Appendix A

Table 1

Data Sources

Observation	Focus Groups	Individual Interviews	Survey Comments
2x Informational open house regarding Fuels II Host: USFS; 2 hours each Public forum on wildfire danger for Nederland residents Host: Forestry researcher from nearby University, 2.5 hours Mediated objector resolution meeting between Nederland residents and USFS Host: USFS, 4 hours Nederland Town Council meeting. Fuels II was an agenda item, 3.5 hours Multiparty monitoring, initial group meeting Host: Forestry researcher from nearby University (as referenced above), 1.5 hours Multiparty monitoring field trip to slated Fuels II treatment units Host: see previous, 5 hours Multiparty monitoring field trip to slated Fuels II treatment units Host: see previous, 3 hours Multiparty monitoring meeting Host: See previous, 2.5 hours	Focus group 1 Will* Jerry Edna Sarah Dennis Focus group 2 Rod (former firefighter) Sophie Anne Focus group 3 Mary Willa Laura Erik (Town Council) Paul Rita Focus group 4 Joanna (Town Council) Jonas Alexis Temma Valerie	Katherine Mira Jill Phil Justin (volunteer firefighter) Oliver Jake Sophia Falcon Fabin Doris	Open-ended responses to the question: *Are there concerns that were not raised in the survey questions?* N=637 completions from zip code 80466 (1897 households, 33.6% response rate)

*All participants are speaking from their point of view as Nederland residents; notable town involvement that might shape a participants' perspective is noted (e.g., firefighter, town council)

Appendix B

Defining Resilient Landscapes from Multiple Stakeholder Perspectives

Individual Interview Protocol

Date: TIME:
Participant ID#:
Participant stakeholder group:
Interviewer/notetaker:

*Thank you for agreeing to participate in this project. This project is funded by the **Joint Fire Science Program**, which is a combined research funding line supported by six federal resource management agencies. The project is designed to develop a better understanding of how different people think about managing forests with a particular focus on fire to meet a broad range of goals and uses of the landscape both today and in the future. We are interviewing representatives of groups who play a role in managing the land – specifically in the West Boulder County area - particularly as it pertains to wildfire. As such, we are very much interested in your viewpoints on the matter.*

I would like to remind you that there are no right or wrong answers; we are simply interested in your thoughts and ideas. During this conversation we will cover a range of topics, including your perspectives on current conditions on the landscape, your visions for how the landscape should look like in the future, and mechanisms to get from current to future conditions.

If you agree to participate further, please indicate that you understand the purpose of this research and that you are a willing participant by answering "yes." With your permission we would like to audiotape our conversation to accompany notes that we take during the interview.

If this is okay, please say "yes." We have here a written description of the project and our contact information should you want to follow-up with us after the interview. It also has the contact information for our university human subjects review board should you have questions or concerns about the research process and you would rather not speak to anyone on the research team.

Finally, I would like to remind you that while we will make every effort to ensure your confidentiality in what you say, we ask that you do not share anything with us that is sensitive or that you are uncomfortable sharing. Do you have any questions before we begin?

A: GENERAL BACKGROUND – this section will take approximately 10 MINUTES
I WILL BE TRACKING TIME PERIODICALLY TO MAKE SURE WE DON'T TAKE TOO MUCH OF YOUR TIME

We'd like to start with some background information about yourself and the forests in your area.

How long have you lived in the area?

What is your occupation? How long have you been in that position?

What do you appreciate most about this landscape?

What are the primary uses of this landscape?

Could you see yourself living anywhere else?

What do you tell others about living here?

What was a conversion or particularly important interaction you had with someone about your connection to this area?

What about this place drew you to move here?

Why did you want to leave where you lived before?

What are the social values that made you want to live here?

What benefits does the landscape provide that are most valued by you?

What types of ecosystem services are provided here that are most valued by stakeholders?

B. BROAD DISCUSSION: addresses the RQ: How do land managers and members of the public compare in their definitions of what comprises a "resilient landscape"?

Our first goal is to have a discussion about what is happening on the landscape around you. What you feel is a good use of the land and what activities are unwanted or not a good use of the land. This can be on private land or public land, but it will be helpful if you specify where/land ownership when you are discussing different land uses.

C. BROAD LAND USE DISCUSSION

1. What are appropriate uses of the public lands around you?
2. Who should have a say in how the public lands should be used?
3. How are conflicts between desired use and allowed use managed?
4. The place you live is considered a Wildland Urban Interface (WUI) area, do you think that label is an accurate description?

D. BROAD FOREST MANAGEMENT/ LAND TREATMENT DISCUSSION
We are interested in talking a bit about how forests and public lands are managed in the area.

1. How would you describe the current conditions of the forests in your area (again, it will be helpful to specify what areas/types you are talking about or if you are describing broad conditions).
    a. Inquiring about the past: What factors do you think have contributed to the forest landscape?
    b. Inquiring about the future: What should the forest ideally look like in the future? What steps can be taken to achieve that?

2. What is the role of public land management (forest management) in this area?
    a. What organizations/agencies do you consider major players in the area?
    b. What do you think the goals should be?
    c. Are these goals different from what you think is currently underway? How so?

3. Scope of perspective:
    a. In the best case scenario, how should forest management/fuels treatments influence your property; your community; the forest at large?

4. Specific Forsythe II discussion:
    a. What do you know about the Forsythe project?
    b. What is your understanding of the goals of the project?
    c. Do you feel that the steps proposed will lead to achieving these goals?
    d. What is your view about how it will change the landscape?
    e. How would Forsythe II impact your experience of living here?

E. Consensus and Conflict: Managing other perspectives

1. Do you feel people around you agree with you?
2. Are there other perspectives about this that you are aware of?
    i. If so, how do their views differ from yours?

3. Who are the parties with differing views? (e.g., land managers, neighbors, community, responders, etc.)

4. Have they/you been able to find common ground regarding different views?
    ii. If so, How?

5. What could be done better (by land managers, by community members, others) in order to find common ground when people's perspectives differ from each other?